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VERSION UPDATES

- V3.00 Changes: None (Baseline)

Deployment Preventive Medicine Measures

Name

Command

Contact Information

USACHPPM
Readiness thru Health

Prepared by:
U.S. Army Center for Health Promotion and Preventive Medicine
(800) 222-9698/ DSN 584-4375/(410) 436-4375
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AGENDA

- Purpose
- Background
- Review of Guide to Staying Healthy
- Preparation for Deployment
- Deployment
- Post Deployment
- Summary
- Conclusion

PURPOSE

Inform Deploying Personnel (Military and Civilian) of the Potential Health Hazards and the Individual Countermeasures Necessary to Assure Personal Safety and Health

BACKGROUND

- US Forces are mobilizing and deploying in support of Operation Enduring Freedom
- Environmental, safety, and occupational health hazards are a potential medical threat to deployed personnel

Historical accounts of wars, battles, and military training consistently relate that the greatest loss of forces was not caused by combat wounds – rather the majority of losses were the result of disease and non-battle injury (DNBI).

GUIDE TO STAYING HEALTHY

- Unfold YOUR *Guide to Staying Healthy*
- Personal Protective Measures (PPM) – Individual Countermeasures
- Reference Guide for this Briefing

This guide is for use by all active/reserve component military, civilian, retiree, and contractor personnel. Any individual who trains and prepares for, or participates in any type of military operation should keep and refer to this guide.

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PREPARING TO DEPLOY

- Medical, Dental & Vision Screening (Soldier Readiness Processing)
- Prepare clothing and gear and personal hygiene items
- Complete Pre-deployment Health Assessment (DD Form 2795)
- Immunizations and chemoprophylaxis
  - Begin malaria chemoprophylaxis two weeks prior to deployment (when directed by medical authority)

SOLDIER HEALTHCARE READINESS

During medical screening, discuss prescribed medications with the examiner; obtain at least 90-day supply of medications

PREPARING TO DEPLOY

ADDITIONAL PACKING ITEMS:

- Cotton underwear (10 changes)
- Birth control supplies
- Personal Hygiene Products
- Anti-fungal cream/powder & shower shoes
- Insect repellent, sunscreen, eye and hearing protection, lip balm, skin lotion

If you need medications or hygiene items which may not be available through normal supply systems, obtain a 6-month supply, or enough for the duration of the operation

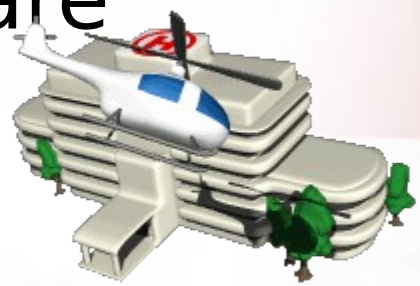
PREPARING TO DEPLOY
FEMALE CONSIDERATIONS

- Birth control pills
- Feminine Hygiene Products (non-deodorant tampons, sanitary napkins, panty liners; menstrual cramp reliever)
- Yeast infection medication (two courses of vaginal treatment)
- Portable Urinary Device
  - For use by female personnel to reduce time needed to urinate and resolve privacy issues when latrines are not available (convoys, field operations) NSN: 8530-01-470-

If using birth control pills, continue as prescribed to regulate menstrual cycles and avoid problems resulting from inconsistent use

DEPLOYMENT HEALTH CARE

- Know where to seek health care when deployed
- May or may not be through same channels as your home station
- Maintain your health and seek care whenever an illness or injury occurs



PREVENTIVE MEDICINE COUNTERMEASURES

- Medical Tests – All Personnel
  - PPD – Purified Protein Derivative (TST – Tuberculin Skin Test)
    - Within 12 months prior to deployment
    - **AND** At time of redeployment
    - **AND** Again between 3-6 months after redeployment
  - HIV – Human Immunodeficiency Virus
    - Required every 2 years. Serum collection before deployment will be tested regardless of date of last test.
  - G6PD - Glucose-6-Phosphate Dehydrogenase
    - Prior to taking Primaquine (anti-malarial drugs are contra-indicated for G6PD deficient individuals)

TEST RESULTS

IMMUNIZATION REQUIREMENTS

- All Personnel
  - Hepatitis A
  - Typhoid
  - Tetanus-diphtheria
  - Yellow fever
  - Meningococcal
  - Influenza
  - Measles, Mumps, Rubella (MMR)
  - Polio

- Selected Personnel
  - Hepatitis B (medics, MPs, firefighters, combat lifesavers)
  - Rabies (occupational risk of exposure)
  - Pneumococcal (asplenic personnel)
  - Anthrax (as directed from higher)
  - Smallpox (as directed from higher)

Confirm requirements with medical authority or OPORD

MALARIA CHEMOPROPHYLAXIS

- Anti-Malaria Medication (as directed)
  - **Take anti-malaria medication as directed by your health care provider**
  - Malaria kills at least 1 million people each year worldwide (World Health

The area/country you are deploying to and your medical condition will determine the type of drug prescribed by your health care provider

FIELD SANITATION TEAM

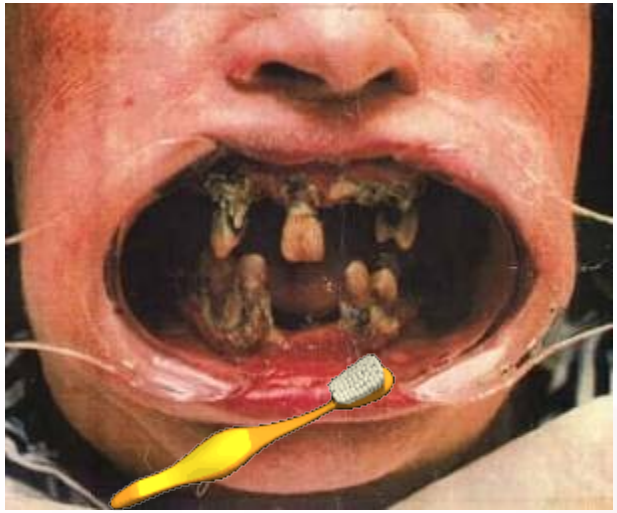
- Field Sanitation Teams (FST) train unit personnel in Preventive Medicine Measures (PMM) and advise the commander and unit leaders on implementation of unit-level PMM.
- Know who the members of your Field Sanitation Team are PRIOR to deployment
- The FST can assist in preventing medical threats to your health
- Deploy with all FST equipment

Failure to apply PMM increases the risk of mission failure

PERSONAL PROTECTIVE MEASURES

- Wash hands frequently
- Do not rub eyes or inside of nose with bare finger(s)
- Bathe/shower regularly (field expedients will do); use unscented products
- Wear shower shoes to prevent athlete's foot
- Dry thoroughly after showering
- Sleep head-to-toe if billeted in common areas
- Wear clean, dry uniforms; change socks daily and uniform at least weekly
- Do not wear nylon or silk undergarments; cotton undergarments are more absorbent and allow the skin to dry
- Seek prompt medical care if problem exists

ORAL HEALTH



- Deploy with:
  - Toothbrush
  - Dental Floss
  - Fluoride Toothpaste
- Brush twice-daily
  - Daily in difficult tactical environments
- Floss daily
- Seek medical attention at the onset of any dental problems

SPIRITUAL HEALTH

- Maintain personal prayer/meditation
- Obtain and read wholesome religious/spiritual literature
- Attend religious/spiritual group discussions/studies
- Process anger, fear, anxiety & guilt through personal & group spiritual/religious activities
- Keep in touch with spiritual advisors/chaplains

NUTRITION

- Drink fluids regularly (hourly fluid intake should not exceed 1.5 quarts, daily fluid intake should not exceed 12 quarts)
- Maintain weight; do not avoid food or attempt weight loss during a deployment
- Work in cold weather can increase energy needs by 10-25%
- Operations in high-altitude areas can increase energy needs by 50% or more

SMOKING

- March – August 2003: 19 cases of severe pneumonia in service members deployed to Southwest Asia
  - 16 smokers, *8 began smoking during th deployment*
  - *Two pneumonia deaths*
- January 2004: 2 new severe cases of pneumonia
  - *Both began smoking during this deployment*

If you don't smoke, don't start during a deployment.
If you do smoke, quit.

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STRESS

- Operational stressors
- Different types and intensities
- Recognize the symptoms of depression
- Seek or encourage help
- Take steps to reduce operational stress

Stress can be intensified for personnel who are exposed to or observe human suffering and/or death

IMPROVE RESISTANCE TO STRESS

- Fear and physical signs or symptoms of stress are normal reactions before and during combat or other dangerous/life-threatening situations
- Talk about what is happening with your buddies
- Learn ways to relax quickly
- Quickly integrate new replacements
- If you must join a new group, be activ in establishing friendships
- Give each other moral support
- Care for your buddies and work toget

CARBON MONOXIDE

- Carbon monoxide (CO) is a colorless, odorless, and tasteless gas produced by engines, stoves, and gas/oil heaters.
- CO replaces oxygen in the body, causing headache, sleepiness, coma, and death.

COUNTERMEASURES

- Keep sleeping area windows slightly open for ventilation and air movement.
- DO NOT sleep in vehicles with the engine running or use engine exhaust for heat.
- DO NOT park vehicles near air intakes to tents, trailers, or environmental control units.

Do not use unapproved commercial off-the-shelf heaters. Check with your unit Safety Officer.

COLD INJURY PREVENTION

- Hypothermia, Frostbite, Chilblains

COUNTERMEASURES

- **When possible, remain inside warming tents/buildings and drink warm, uncaffeinated liquids for relief from the cold**
- **If working outside or on guard duty, insulate yourself from the ground and wind. Rotate duty as frequently as mission allows.**
- **Properly wear the Extended Cold Weather Clothing System**

You should receive annual unit training on prevention of cold injury

COLDER

C: Keep clothing **C**lean

O: Avoid **O**verheating.

L: Wear clothing **L**oose and in layers

D: Keep clothing as **D**ry as possible

E: **E**xamine clothing (holes, tears, broken fasteners)

R: **R**epair or replace damaged clothing

Notify your first-line supervisor if you have had a previous cold injury. Use the buddy system.

Wind Chill Chart

Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes | 10 minutes | 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

WET SKIN CAN SIGNIFICANTLY DECREASE THE TIME FOR FROSTBITE TO OCCUR

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HEAT INJURY PREVENTION

- Heat Cramps, Exhaustion, or Stroke

COUNTERMEASURES

- Drink fluids continuously (hourly fluid intake should not exceed 1.5 quarts, daily fluid intake should not exceed 12 quarts)
- Maintain acclimatization
- Protect yourself from exposure to sunlight and wind
- Maintain good physical condition
- Establish work/rest schedules
- Wear proper clothing
- Participate in training

You should receive annual unit training on prevention of heat injury. Heat injuries are preventable!

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HEAT

H: Heat category – WBGT Index

E: Exertion level (prior 3 days)

A: Acclimatization

T: Tables – Water/Work/Rest

REMEMBER

Water requirements are not reduced by any form of training or acclimatization.

Units which have soldiers who do not drink because they do not have opportunities to urinate have a leadership problem.

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Work/Rest and Water Consumption Table

Applies to average sized, heat-acclimated soldier wearing BDU, hot weather. (See TB MED 507 for further guidance.)

Easy Work	Moderate Work	Hard Work
• Weapon Maintenance • Walking Hard Surface at 2.5 mph, < 30 lb Load • Marksmanship Training • Drill and Ceremony • Manual of Arms	• Walking Loose Sand at 2.5 mph, No Load • Walking Hard Surface at 3.5 mph, < 40 lb Load • Calisthenics • Patrolling • Individual Movement Techniques, i.e., Low Crawl or High Crawl • Defensive Position Construction	• Walking Hard Surface at 3.5 mph, ≥ 40 lb Load • Walking Loose Sand at 2.5 mph with Load • Field Assaults

Heat Category	WBGT Index, F°	Easy Work		Moderate Work		Hard Work	
		Work/Rest (min)	*Water Intake (qt/hr)*	*Work/Rest (min)*	*Water Intake (qt/hr)*	*Work/Rest (min)*	*Water Intake (qt/hr)*
1	78° - 81.9°	NL	½	NL	¾	40/20 min	¾
2 (GREEN)	82° - 84.9°	NL	½	50/10 min	¾	30/30 min	1
3 (YELLOW)	85° - 87.9°	NL	¾	40/20 min	¾	30/30 min	1
4 (RED)	88° - 89.9°	NL	¾	30/30 min	¾	20/40 min	1
5 (BLACK)	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

- The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hrs of work in the specified heat category. Fluid needs can vary based on individual differences (± ¼ qt/hr) and exposure to full sun or full shade (± ¼ qt/hr).
- **NL** = no limit to work time per hr.
- **Rest** = minimal physical activity (sitting or standing) accomplished in shade if possible.
- ***CAUTION: Hourly fluid intake should not exceed 1½ qts.***

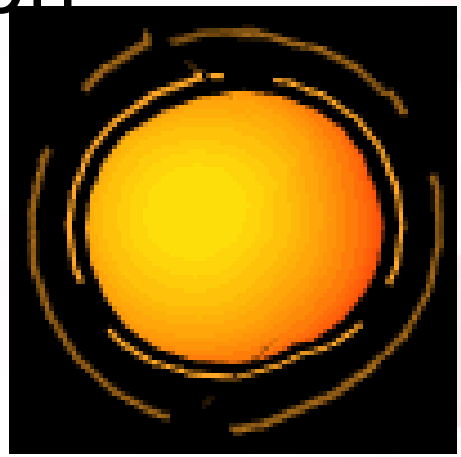
  Daily fluid intake should not exceed 12 qts.
- If wearing body armor, add **5°F** to WBGT index in humid climates.
- If doing Easy Work and wearing NBC (MOPP 4) clothing, add **10°F** to WBGT index.
- If doing Moderate or Hard Work and wearing NBC (MOPP 4) clothing, add **20°F** to WBGT index.

For additional copies, contact: U.S. Army Center for Health Promotion and Preventive Medicine Health Information Operations Division at (800) 222-9698 or CHPPM - Health Information Operations@apg.amedd.army. mil.
For electronic versions, see http://chppm-www.apgea.army.mil/heat. Local reproduction is authorized.
June 2004

CP-033-0404

SUNBURN

- Prevent overexposing skin and eyes to solar radiation and wind



COUNTERMEASURES

- Use sunscreen and lip balm
- Use protective eyewear
- Limit exposure
- Cover nose and mouth to limit drying

Sunburn reduces soldier readiness and increases the likelihood of skin cancer.

HIGH ELEVATIONS

- High Altitude-elevations over 6,000 feet
  - High Altitude illnesses can kill
  - Stage ascents over time
  - Environmental conditions are more severe at higher elevations
    - Lower oxygen levels (“thin air”)
    - Colder temperatures, high winds, low visibility
    - Ice, snow, rocks, avalanches

- Remain well hydrated

Be observant of the common symptoms of mountain sickness: headache, nausea, vomiting, dizziness, fatigue, irritability, and coughing. Seek medical attention immediately in you experience any of these symptoms.

SAND, DUST, AND WIND (NUMBER ONE COMPLAINT)

- Sand, wind, and dust cause health problems, particularly to skin, eyes, throat and lungs
- High winds create flying object hazards which may not be visible in blowing sand or dust
- Wash daily, especially body areas that collect dust and sand
- Protect lips with lip balm and use moisturizing skin lotion on your hands to prevent cracked, chapped fingers
- Shield your face with cloth materials to protect from blowing dust and sand
- Protect your eyes

HEARING CONSERVATION

- Loud noise causes permanent hearing loss

COUNTERMEASURES

- Have your hearing protectio with you at all times and us
- Be sure your ear plugs, noise muffs or helmets fit properly and are in good condition
- Avoid noise or limit time around noise to only critical tasks

Combat Arms Earplug

NSN 6515-01-466-

Authorized wear

IAW AR 670-1

If you have to raise your voice to be understood, it is too noisy.

Put on hearing protection.

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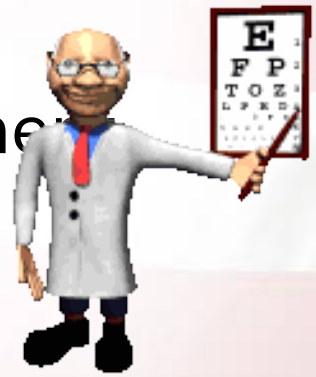
VISION CONSERVATION

- **Preventive Measures and Eye Protection**
  - Contact lens use is prohibited for use in environments where exposure to smoke, toxic chemical vapors, sand, or dust occurs
  - If required, maintain 2 pair of glasses and 1 protective mask insert
  - Use eye protection when in any potentially eye hazardous environme
    - Safety goggles or spectacles with side shields*
    - emical splash goggles*

*(ANSI Z87.1 approved)



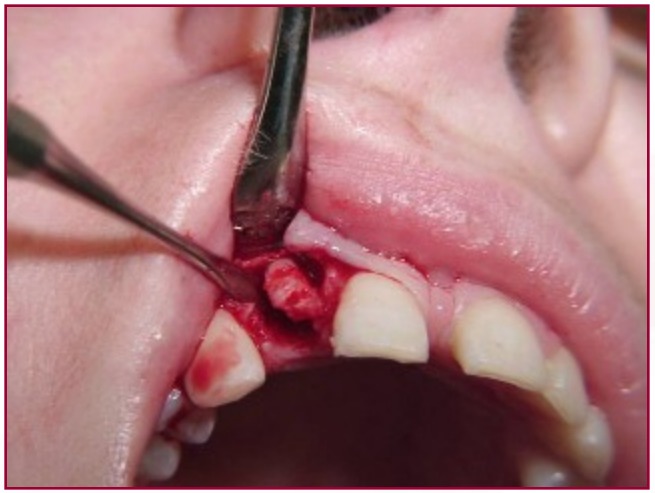
Vision Ready is Mission Ready!

MOUTH GUARDS

Use This

OR

Lose These



FOODBORNE AND WATERBORNE DISEASES

- Diarrhea
- Cholera
- Hepatitis A and E

- Typhoid Fever
- Chemicals/Pesticides
- Heavy Metal Poisoning

COUNTERMEASURES

- Do not consume any food, ice, water, or beverage (to include bottled water) that have not been approved by the U.S. military
- Assume all non-approved food, ice, and water is contaminated

Even a one-time consumption of these foods or water may cause severe illness

NOT AN APPROVED SOURCE

FOOD CONTAMINATION

- Metals
  - Arsenic
  - Chromium
  - Cadmium
  - Lead
- Pesticides
- Insecticides
- Fertilizers

- Industrial chemical runoff
- Hazardous waste dumping
- Untreated sewage
- Human waste
- Animal waste

PERSONAL PROTECTIVE MEASURES

Permethrin On Uniform

+

DEET On Exposed Skin

+

Properly Worn Uniform

MAXIMUM PROTECTION

DOD Insect Repellent System

YOU NEED TO KNOW…
Dry cleaning removes permethrin from the uniform

INSECT REPELLENTS FOR SKIN AND CLOTHING

DEET lotion

NSN 6840-01-284-

- Apply a thin coat to EXPOSED skin
- One application lasts up to 12

Permethrin

- Individual Dynamic Absorption Kit (IDA)
- Treatment lasts for
  for over 50 launderings

NSN 6840-01-345-0237

NSN 6840-01-278-1336

- Aerosol spray can
- Treatment lasts through 5-6 washes

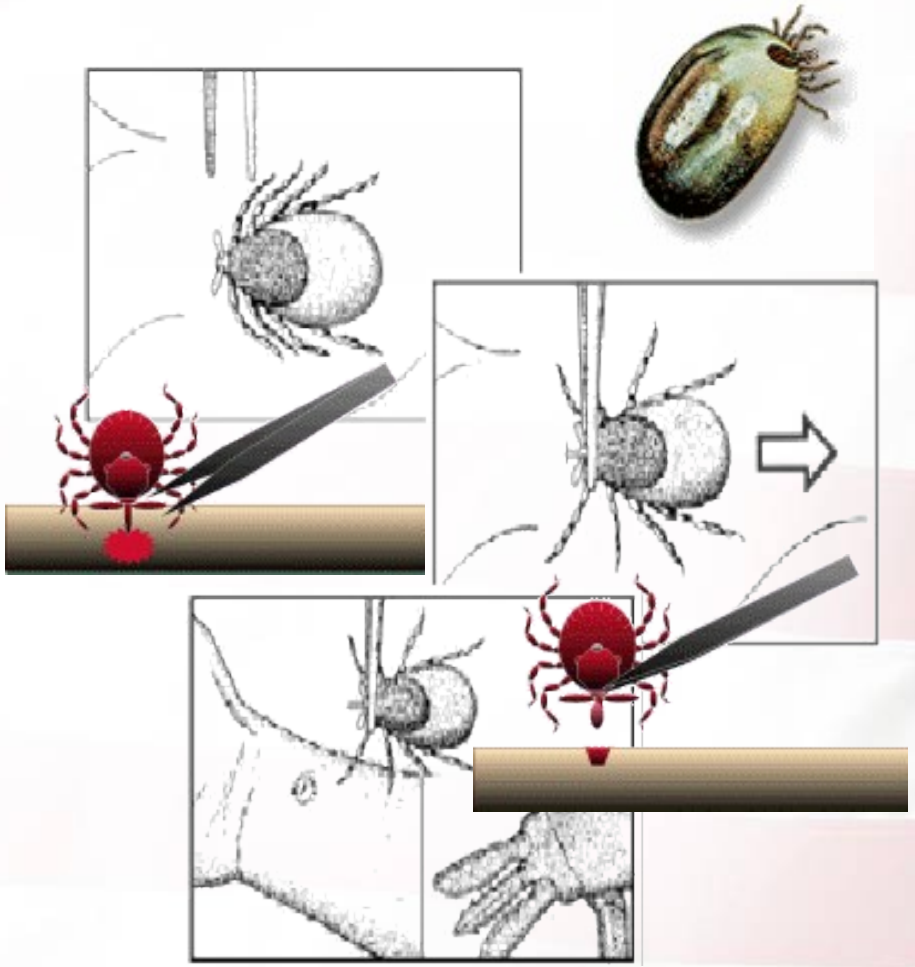
OTHER INDIVIDUAL COUNTERMEASURES

- Wash and inspect your body for insects/ticks and bites daily
- Use buddy system to check clothing routinely
- Launder uniform routinely to remove insects and eggs
- Order a permethrin-impregnated bed net for use while sleeping
  - Otherwise, treat a bed net before use by spraying the outside of the net with permethrin
  - Tuck edges under cot or sleeping bag
  - Don't let net touch your skin while you sleep

NSN 3740-01-516-4415

TICK REMOVAL PROCEDURES

- Use fine-tipped tweezers to grasp mouthparts
- Grasp mouthparts against skin surface
- Pull back slowly and steadily with firm tension
- Avoid squeezing tick
- Wash wound and apply an antiseptic

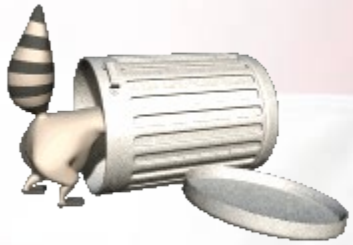


HAZARDOUS ANIMALS

- Rabies: wild dogs, cats, and other animals
- Hantavirus: infected rodent feces and urine
- Ticks, fleas, mites: carried by rodents
- Rodents: contaminate food, damage equipment

COUNTERMEASURES

- Do not feed, handle, or keep wild or stray animals as pets or mascots
- Do not tolerate the presence of rodents
- Maintain a high state of sanitation
- Avoid inhaling dust when cleaning unoccupied areas (avoid dry sweeping)
- Seek medical attention for animal bites or scratches



VENOMOUS ANIMALS

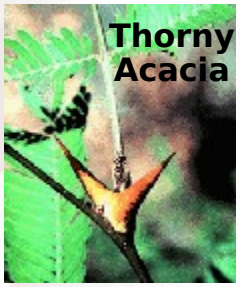
- Snakes: Pit vipers, cobras, adders, asps, and kraits
- Bees, wasps, hornets, and ants
- Spiders, centipedes, and scorpions

COUNTERMEASURES

- Avoid bees, hornets, wasps, ants, and spiders
- Assume ALL snakes are poisonous
- Do not attempt to handle or capture any snakes
- Shake out clothes, shoes, and bedding before use
- Wear foot protection at all times (no barefoot)
- Bring proper medication if allergic to bites/stings

HAZARDOUS PLANTS

- Plant resins cause contact dermatitis
- Poisonous roots, stems, leaves, and fruit
- Weeds and stinging nettles
- Thorny shrubs and trees



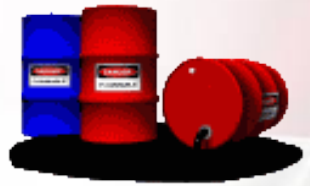
THORNY PLANTS

COUNTERMEASURES

- Avoid touching unfamiliar plants
- Use clothing as protective barrier
- Rinse skin promptly after exposure
- Wash clothing after contact
- Never eat any part of unfamiliar plant

ENVIRONMENTAL CONSIDERATIONS

- Consider environmental aspects of operations
- What was the area originally used for?
- Properly manage hazardous material
- Properly dispose of hazardous and medical waste
- Prevent oil and fuel spills
- Clean vehicles at proper locations
- Respect cultural and historical property
- Protect natural resources and the terrain



ENVIRONMENTAL CONSIDERATIONS

- Hazardous Materials
- Hazardous Waste
- Medical Waste
- Refueling Points
- Spill Response
- Wastewater Discharge
- Decon Sites

- Latrines
- Burn pits
- Laundry and Bath
- Fuel Storage
- POL Storage
- Generators
- Special Wastes
- Burial Sites

ENVIRONMENTAL AIR POLLUTION

- Location of Air Pollution Sources
  - Burning or Damaged Buildings
  - Open Burning/Waste Disposal
  - Vehicle/Generator Exhaust

- Contaminants
  - Dust, Silica, Asbestos, Lead
  - Organic Vapors and Organic Gases

- Industrial Facilities

OIL FIELD HAZARDS (OIL BURNING)

- Burning Trench
  - See/Feel-Wall of fire and black smoke, low visibility, intense heat, sulfur-oily smell
  - Danger-Toxic smoke, gases, fumes, darkness, intense heat
  - Do This-Avoid burning fields, trenches, facilities, move upwind if possible, avoid intense heat, avoid contact with oil/oil spray, use sand to clean skin and clothing, close up vehicles
- Burning Storage Tanks
  - See/Feel-Burning pools of oil around well heads and tanks
  - Danger-Sudden expansion of fires, range finders/IR won't work well
- Blown Well Head
  - See/Feel-Intense blow torch fire from well h

OIL FIELD HAZARD (OIL NOT BURNING)

- Blown Well Head
  - See/Feel-Violent jet and spray of oil, pools of oil, rotten egg smell
  - Danger-Sudden ignition of oil, oil spray, toxic gases and fumes, projectiles from well head, discharging weapons may ignite oil and gas
  - Do This-Avoid area, avoid oil spray, clean with soapy water, stay away from well heads, don mask and evacuate upwind, use detection equipment if available
- Intact Well Head
  - See/Feel-Pipes and valves, may be surrounded by sand bags
  - Danger-Undetonated charges which may explode
  - Do This-Avoid the well head

OIL FIELD HAZARD (OIL NOT BURNING)

- Ruptured Storage Tanks and Refineries
  - See/Feel-Pools of oil and oily smell
  - Danger-Sudden ignition of oil and fumes
  - Do This-Avoid
- Oil Filled Trenches
  - See/Feel-Oily smell
  - Danger-Sudden ignition of oil
  - Do This-Proceed cautiously

NOTE: Igniting Oil and Gas is EXTREMELY Dangerous. It is a Command decision to ignite oil or gas that is not burning. This should only be done under strict supervision.

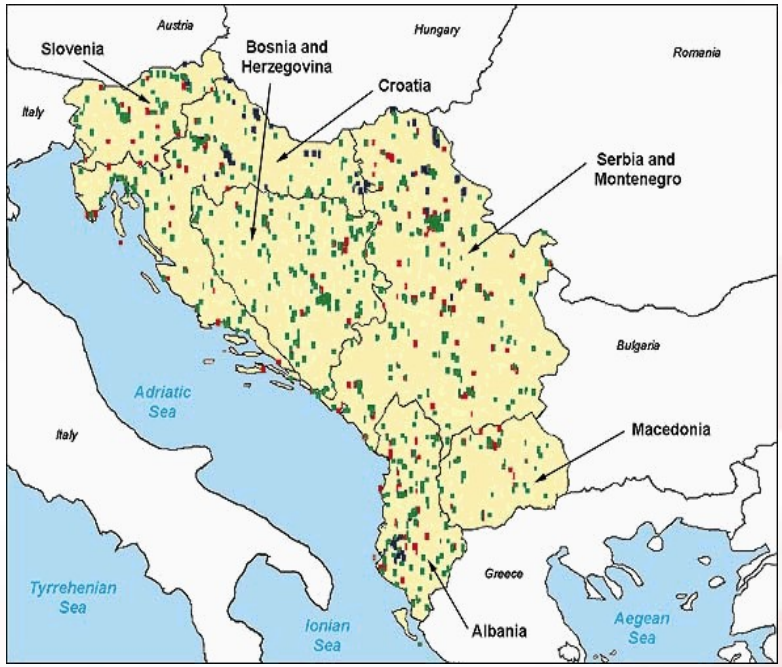
TOXIC INDUSTRIAL CHEMICALS/MATERIALS

- OCONUS threat exists from accidental or **intentional** release of TICs/TIMs.
- CAUTION - There are many uncommon/unknown TIC/TIM sources in an OCONUS setting.
- Become familiar with individual response technique, such as shelter in place, and any emergency warning systems (if applicable). Make sure other unit members are also aware.
- Protective measures are chemical specific – rely on trained personnel for recomm tions.
- There is no one size fits all protective measures – this includes MOPP gear.

TOXIC INDUSTRIAL CHEMICALS / MATERIALS

- Personnel deployed in support of missions ranging from war to operations other than war may be exposed to harmful chemicals as a result of industrial accidents, sabotage, or the intentional or unintentional actions of enemy or friendly forces.

Example Catastrophic Toxicological or Physical Hazards for Industrial Sites, Balkan States



OCCUPATIONAL HEALTH PRE-DEPLOYMENT

- Current Industrial Hygiene review of operations
- Engineering controls
- Supply of required Personal Protective Equipment (PPE)
- Hazard Communication (HAZCOM) training
- Personal Protective Equipment training
- Current medical surveillance

OCCUPATIONAL HEALTH DEPLOYMENT

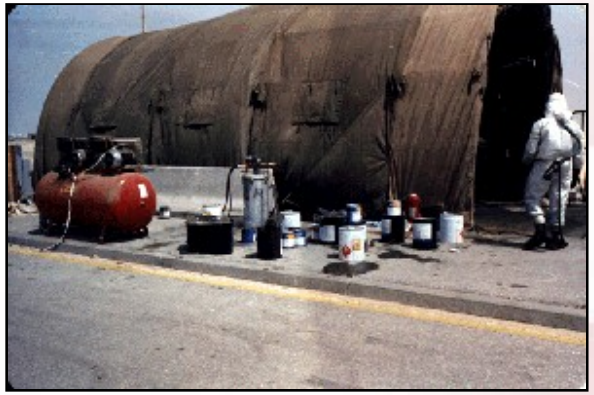
- Occupational Health Hazards
- Use your applicable control strategies
  - Elimination or substitution
  - Engineering control
  - Work Practices and administrative controls
  - Personal Protective Equipment
- Follow the PPE program requirements

FIELD FACILITIES
CONTROL OF HAZARDOUS EXPOSURES

- Garrison facilities include engineering controls to control chemical exposures
- In the field, additional efforts are needed to provide the same level of control for these occupational exposures
- Install and use safety countermeasures

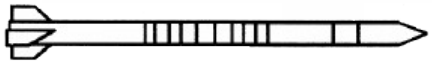
OCCUPATIONAL HAZARDS

- Exhaust from engines and fuel space heaters
- Gases from weapons firing
- Solvents used to clean weapons
- Chemicals and metals from vehicles and equipment
- Greases and oil from vehicle maintenance repair
- Detergents used to clean equipme
- Fuels and refueling operations
- Weapon systems: radiation energy shock, vibration, noise



DEPLETED URANIUM (DU)

- Depleted uranium (DU) is used in armor-piercing munitions and in enhanced tank armor protection
- DU can cause adverse health effects if it enters your body (inhaled, ingested, fragments).



COUNTERMEASURES

- Receive Depleted Uranium Awareness Training
- Assume a DU contamination zone of 50 meters around actively burning fires involving any armored combat vehicles
- As with all battlefield debris-do not touch or move the object
- Notify authorities of the location of any debris
- Exercise standard field hygiene, to include washing hands and face
- No additional protective measures are required for handling unfired DU munitions other than those required for all munitions

CAVES

- Rabies from bat bites
- Tick-borne – Relapsing Fever
- Histoplasmosis from bat guano
- Confined Space Issues
  - Poor air exchange/ventilation
  - Asphyxiant gasses and/or low oxygen level
  - Ordnance/munitions
  - Other hazardous chemicals and materials stored in the caves

AIRBASE CONTAMINATION

- Soil and ground water contamination as a result of poor storage management, accidental releases, and improper waste disposal techniques
  - Kerosene, diesel fuel, gasoline, heating oil, lubricants, organic solvents, PCBs, heavy metals, rocket propellants, and de-icing compounds
- Volatile organic compounds evaporating from soil and ground water may accumulate in the airspace inside of tents or buildings constructed over contaminated areas

AIRBASE CONTAMINATION

- **Personnel exposed to these contaminants may experience adverse health effects**

COUNTERMEASURES

- **Consult with preventive medicine personnel prior to engaging in soil excavation or other activities that involve direct contact with soil or ground water (example: construction of defensive positions)**
- **Do not work or bivouac over contaminated areas or in potentially contaminated buildings**
- **Exercise standard field hygiene (wash after contact)**
- **Seek medical care if you experience: eye, nose, and throat irritation; headaches, dizziness, weakness, loss of coordination, confusion, blurred vision, or nausea**

POST DEPLOYMENT

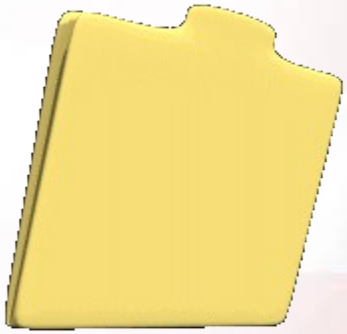
- Complete Post-Deployment Medical Health Assessment (DD FORM 2796)
- Receive post-deployment preventive medicine briefing
- Receive post-deployment screening, testing, and follow-up
- Continue malaria chemoprophylaxis for four weeks after departure or as directed
- Malaria terminal prophylaxis with daily primaquine for 14 days after departure as directed

POST DEPLOYMENT

- Continue to seek counseling from Chaplain or medical personnel
- Homecoming Stress
  - Don’t expect things to be exactly the same, especially if long deployment
  - Ease back into roles; don’t rush it
  - Children may be withdrawn
  - Spouse may be moody or depressed
  - Financial and property issues may require immediate attention

SUMMARY

- Review of *Guide to Staying Healthy*
- Preparation for Deployment
- Deployment
- Medical Threat
- Post Deployment



CONCLUSION

- Health threat awareness and implementation of associated countermeasures discussed in the briefing are critical to all military missions (including combat, support, and sustaining base military and civilian forces). Apply this information during all phases of military operations, including training, pre-deployment, deployment, and post-deployment.

QUESTIONS

Contact Your Local Preventive Medicine Service or Medical Support Unit for Additional Information

USACHPPM
Readiness thru Health

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